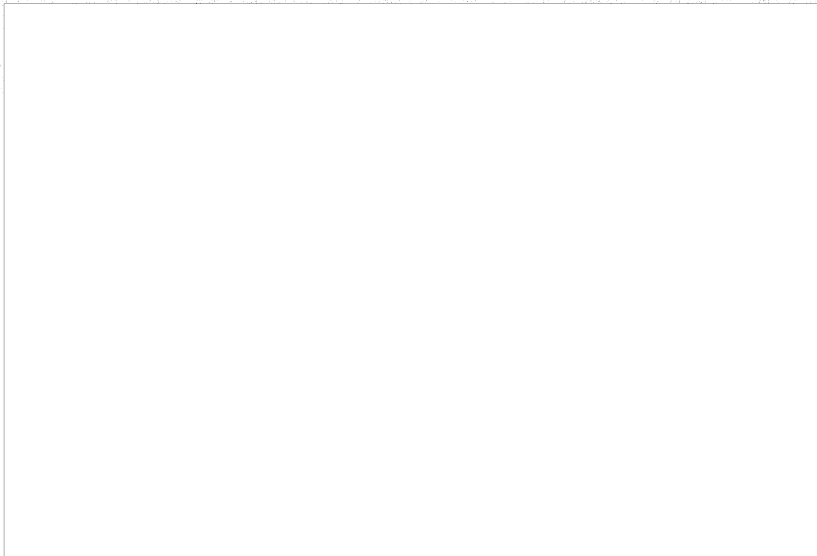
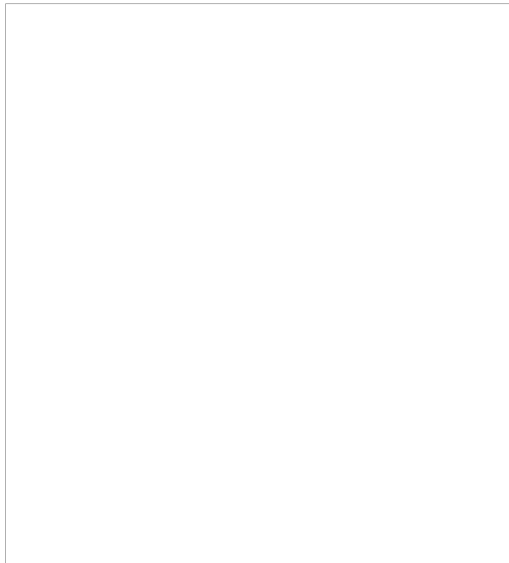


50X1-HUM



From the [redacted] [redacted]

From the [redacted] [redacted]
[redacted], [redacted], [redacted]
[redacted]



50X1-HUM

CONFIDENTIAL

2000-000000

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL

linen, hemstitch and duck are used by the Navy, Air Force and Navy Sea Service for uniforms, hats, and for collars, coats, trousers, and other articles, and for protective clothing, etc.

Flax is also used for paper, and for bookbinding, linen twill, bedding and uniforms, and for other uses. Flax is also used for paper, and for bookbinding, linen twill, bedding and uniforms, and for other uses.

Flax is also used for paper, and for bookbinding, linen twill, bedding and uniforms, and for other uses.

Flax is also used for paper, and for bookbinding, linen twill, bedding and uniforms, and for other uses.

Flax is also used for paper, and for bookbinding, linen twill, bedding and uniforms, and for other uses.

Flax is also used for paper, and for bookbinding, linen twill, bedding and uniforms, and for other uses.

CONFIDENTIAL

Generally speaking, in all flax cultivating countries of the world, about 70 percent of all the flax sown is oil flax. In the USSR on the contrary, the cultivation of fibrous flax predominates. During the period of 1914 - 1937 fiber flax comprised 17.3 percent of the flax sown area in the USSR. When the Baltic States and the western areas of Belorussia and the Ukraine were incorporated into the USSR, the area sown in flax grew in size.

In the era of World War II, flax fiber crops amounted to 6.7 percent of the world's textile raw material production, and came in the fifth place - after cotton, jute, wool, and synthetic fiber.

In the production of fiber flax, the USSR occupied an exclusive position. In 1939 the total world sown area in fiber flax amounted to 3,460,000 hectares. The share of the USSR was 2,165,000 hectares, or 62.6 percent. About 40 percent of all kolkhozes and about one-third of all sovkhozes in the USSR were cultivating fiber flax.

At the present time, in even seasons, fiber flax occupies third place among all industrial crops in the USSR, and second place among fiber crops (after cotton). In most districts of the non-Chukotka belt, fiber flax is the principle crop. In specialized kolkhozes, flax is cultivated on one field in a seven or nine year cycle, i.e., on 11-14 percent of the acreage.

Scientific cultivation and treatment of flax in typical specialized kolkhozes takes 20-30 percent of all work in fields and meadows. According to figures published in 1939 by the TsSUkhU of the State Planning Commission USSR, average labor spent on cultivation and initial processing of one hectare of flax in Kalinin Oblast mounted in 1937 to 61.5 man-days, whereas labor spent on 1 centner of fiber amounted to 47.6 man-days. In 1937, kolkhozes and MTSs processed only about 40 percent of the total flax crop; the rest of it was processed in flax factories.

CONFIDENTIAL

- 3 -

CONFIDENTIALFlax Cultivation in Prerevolutionary Russia

Before the Revolution, crop acreage of fiber flax reached a peak in Russia in 1913. In that year, total crop acreage in Russia amounted (according to TsSU data) to 1,381,500 hectares.

The main flax-cultivating regions, which averaged over 50,000 hectares of fiber flax crop for the period 1907 - 1913, were the Vyatka, Smolensk, Tver, Pskov, Leningrad, Vitebsk, and Perm provinces. Of these, Vyatka province averaged 124,400 hectares, Smolensk province--123,200; Tver province--107,300; and Pskov province--103,300 hectares of flax crop.

Flax production in the prerevolutionary Russia was based on 4.5 million individual farms of poor and middle peasants. The tools used in these farms were, as a rule, primitive wooden plows and harrows, and tillage techniques were highly inefficient.

Although Russia produced two thirds of the world flax fiber crop, the Russian linen industry consumed less flax fiber than England or France. Most flax fiber produced ⁱⁿ old Russia (77.3 percent in 1907 - 1913) was exported to England, Belgium, Germany, and other countries. Trade in Russian flax, inside as well as outside Russia, was carried out mainly by foreign companies.

In the period of World War I and during the following Civil War and Intervention, flax cultivation in our country was brought to the lowest possible level. In 1920, the acreage of fiber flax in Soviet Russia reached only 63.9 percent of that in 1913.

Flax Cultivation After the October Socialist Revolution

The October Revolution established the necessary conditions for rehabilitation and further development of flax cultivation. Due to the New Economic Policy, through development of agricultural cooperatives of flax producers, flax cultivation was quickly rehabilitated, and in 1925, acreage of fiber flax was already 25 percent above the level of 1913.

CONFIDENTIAL

CONFIDENTIAL

In 1933, acreage of fiber flax crops in the USSR hit its peak - 2,510,000 hectares. Such a sharp extension of flax acreage in the years of the First Five-Year Plan, without full backing by adequate organization and scientific agricultural measures, caused a decrease in productivity and in the quality of flax fiber. Therefore, in the following years, acreage of fiber flax was gradually cut down, in accordance with real possibilities of flax cultivation after adoption of regular crop rotation systems by the kolkhozes. By 1939, USSR flax acreage had been cut down to 1,220,400 hectares.

After the incorporation of the Baltic Republics and the western parts of Belorussia and the Ukraine into the USSR fiber flax acreage showed some increase. In 1940, it amounted to 2,113,000 hectares, i.e., to 1.7 times the acreage sown in flax in 1933. The extension of acreage of fiber flax in the USSR before the war is shown on the chart (Fig. 1).

Leading flax cultivation regions had increased the acreage sown 1.6 - 1.8 times the 1933 acreage by 1940. An extension of flax acreage took place in Belorussian SSR, in the northwest and the southwest of the European part of the USSR, and in Siberia. The Ukrainian SSR was added as a new cultivation zone of fiber flax. Thus, considerable changes have taken place in the geographical distribution of fiber flax cultivation since the 1917 Revolution.

By 1940, fiber flax was cultivated in 55 oblasts, krays, and republics. Over 50,000 hectares of flax were sown in 14 regions and republics; 30.7 percent of USSR flax acreage was concentrated in these regions. The leading flax-cultivating regions were Kalinin, Smolensk, Leningrad, Kirov, and Yaroslavl oblasts, each of them having over 100,000 hectares flax acreage. Their aggregate acreage was 920,200 hectares or 43.9 percent of USSR fiber flax acreage.

CONFIDENTIAL

CONFIDENTIAL

Figure 1

In 1925 - 1929, the average harvest of flax fiber amounted to 290,300 tons; in 1930 - 1934, to 512,600 tons; in 1935 - 1939 to 569,000 tons. In 1940, the gross output of flax fiber was 565,000 tons.

In 1925, the share of the socialist economy, i.e., of kolkhozes and cooperative organizations (communal sowing) in flax cultivation, amounted to only 2 percent of the total flax harvest; in 1935, it reached 65.6 percent; and in 1934, 70 percent. By 1939, 95.4 percent of total flax harvest was concentrated in the socialized economy: 92.3 percent being sown by kolkhozes, and 3.1 percent by sovkhozes. In the USSR (Pavlodar, Gorky, Leningrad, Moscow, Yaroslavl, Vladimir, Ivanovo, and Gorky Oblasts, and in the USSR) flax harvest amounted in 1939 to 120 percent of the 1913 harvest, and to 110 percent of the 1929 harvest.

Simultaneously with the general extension of flax harvest, agriculture in the flax-cultivating districts was developing along the lines of intensification. In 1939, the total sown areas in leading flax-cultivating regions showed an increase of approximately 30 percent as against 1913. Flax harvest amounted to 1.4 times, and potatoes and other tubers - to 2.4 times the 1913 harvests. The share of flax among other crops rose from 6.2 to 8.5 percent; that of cultivated crops - from 5.1 to 10.2 percent. A considerable increase was shown by increase of fodder-crops.

Establishment of MTS in flax-cultivating regions started in 1929, when two MTS were organized in two of the old flax-cultivating districts: The Ostrov (Pskov Oblast) and the Dzerzhinsk (Leningrad Oblast) stations. The largest numerical increase in MTS took place in flax cultivating regions during the second Five Year Plan: out of the total of 800 MTS which were functioning in leading flax-cultivating regions early in 1938, 583 MTS (72 percent) had been organized during the Second Five Year Plan. In 1932, flax acreage

CONFIDENTIAL

CONFIDENTIAL

In kolkhozes serviced by MTS amounted to 37.6 percent of the total flax acreage, and this figure increased to 46.7 percent in 1936. In the nine oblasts and republics mentioned above, in 1936 MTS serviced from 86.9 hectares (Tselinsk Oblast) to 154.6 hectares (Udmurt ASSR) for every 100 hectares tilled without machines.

The amount of work performed by the MTS has been increasing not only due to a growing surplus of tractor traction, but also as a result of improved use of tractors and of agricultural machinery. Thus, in 1936, in the majority of flax-cultivating regions, the work performed per one M-1 tractor amounted to 1.6-1.8 times as much as in 1933.

In 1946, the share of tractor traction in the total traction surplus showed a still higher increase, reaching an average of 41.7 percent for two republics and six oblasts with intensive flax cultivation (Volynia, Sverdlovsk, Leningrad, Kharkov, Pskov, and Ivanovo Oblasts, Belorussian SSR, and Udmurt ASSR).

According to figures of the TsSUkhU, Gosplan, USSR published in 1939, in 1937 the average share of MTS in flax cultivation in the above-mentioned oblasts was as follows: fall ploughing - 62.7 percent; spring ploughing - 55.2 percent; spring sowing - 7.6 percent; fall sowing - 18.9 percent; combine harvesting of cereals - 2.5 percent.

To illustrate achievements in this field, let us take some data on mechanization of pulling, threshing, and scutching of flax before World War II.

Before 1931, pulling of flax was carried out exclusively by hand. In 1922 - 1925, in individual peasant households, pulling of 1 hectare of flax required an average of 19 men-days (according to TsSUkhU figures) which amounted to 15-20 percent of all the labor spent on the initial treatment of flax.

Flax-pulling machines "Komsomolka" (with tractor traction) and "Pionerka" (with horse traction), designed by Soviet designers and manufactured

CONFIDENTIAL

CONFIDENTIAL

in Soviet factories, were used for the first time in the USSR in 1931. The share of flax-pullers, in harvesting of flax crops was insignificant - less than 1 percent.

In 1933 a broad-south flax puller (the VUIL-5) was designed in the All-Union Scientific-Research Institute of flax. In 1938, it was replaced by a better designed and more efficient flax-puller, the VIOFOT-LI-7.

Increased use of broad-south flax-pullers and amount of flax pulled by them in the USSR is shown in table 1.

Table 1

Growth of Mechanization of Flax-pulling Before World War II

	1931	1935	1936	1937	1938	1939	1940
Number of broad-south flax-pullers	3,122	4,300	7,532	8,324	9,819	10,520	9,746
Number of flax-pullers per 1,000 hectares of flax cultivated	1.3	2.2	3.6	4.0	5.3	6.0	5.3
Amount of flax pulled by broad-south flax-pullers (in thousands of hectares)	16.3	41.0	172.2	244.9	361.3	432.0	362.2
Average of flax pulled in one season per one wide-catch flax-puller (in hectares)	5.5	9.0	24.0	29.7	37.0	41.1	34.5
Percent of flax crop mechanically harvested with broad-south flax-pullers	1.1	2.2	6.2	11.6	19.0	23.0	14.3

Practice of regions leading in mechanical flax-pulling, of ITS, and of Stakhanovite flax-pullers demonstrates very clearly that, before World War II, much could be done to improve use of flax-pulling machines. In 1939, in four oblasts, the following increase of flax crops was pulled per one flax-puller (in hectares): Moscow Oblast 86; Smolensk Oblast 64;

CONFIDENTIAL

CONFIDENTIAL

Initial processing of flax in the most labor-consuming step in flax cultivation, according to figures published in 1936 by GILBY, Gordon, 1931, to 1947 initial processing of flax was per hectare on the holdings of Volinia Oblast 11.5 percent, and in the ^{Belarus, etc.} ~~USSR~~, 27.2 percent of the total labor spent in flax cultivation. Only about one-third of all processing of flax is done on the holdings, and the thirds of the work was found in the factories.

Before 1931, initial processing of flax on holdings was carried out by hand and machinery flax-processing plants. Large areas of a flax factory flax-processing plant were built in 1931, and a description of some flax-processing plants of flax. This station, located in the flax industry, is a 100% state flax. From 1931 till 1937 a total of 4,111 MT-1111, flax-processing machines were manufactured; flax was also used in the production of flax. In 1934, the first of the MT-1111, a flax-processing machine was built. In 1935, 1936, 1937, and 1938, 1,176 machines were built, and 1,176 machines were built. In 1939, 1,176 machines were built, and 1,176 machines were built.

Located in the industrial sector of production are a 100% flax, the work of MT-1111 and MT-1111 machines (without considering flax-processing plants), and the almost complete restoration of the flax-processing plant of flax.

However, in most cases, these machines were utilized much below full efficiency. The average output per MT-1111 flax-processing machine amounted, in 1939, to only 2.4 tons of fiber in 1939 (year of best use of flax for that machine). In the same year, on some MT-1111, average output per MT-1111 flax-processing machine exceeded 20 tons: on the Bryukovo MT-1111 (Chitovik Oblast), one machine attained a production total of 30.6 tons of fiber; on the Veronine MT-1111 (Volinia Oblast) 27.2 tons; and on Borodiansk MT-1111 (Vlad Oblast) 23.4 tons.

CONFIDENTIAL

CONFIDENTIAL

The average production of flax fiber per KLT-VNIII-A machine was also generally low in different oblasts in 1938: in Leningrad Oblast 10.8 centners; in Chernigov Oblast 25.9 centners; in Moscow Oblast 5.6 reached a much higher production level. In Smolensk Oblast, 21 kolkhozes with highest production figures per KLT-VNIII-A flax scutching machine produced, on the average, 68.9 centners of long fiber.

These figures indicate very clearly that much could be done to improve the effective use of flax-scutching machines.

Big changes have taken place in the initial processing of flax in the factories. By 1940, in the USSR 475 flax factories were operating which had been built mainly during the years 1931 - 1933. These flax factories had 570 flax-scutching machines (swingle turbines) and were processing 70 percent of the industrial production of flax in 1939 and 1940. In 1931, the share of flax factories in the output amounted only to 12.7 percent. The average productivity of swingle turbines per machine-shift increased from 13.4 centners in 1933 to 36.6 centners in 1940, and in terms of long fiber produced from 0.9 to 3.4 centners. In 1940 productivity of swingle turbines was considerably exceeding established production norms.

In the same period, the average daily productivity of one worker in a flax factory increased from 12 kilograms of fiber in 1933 to 26 kilograms in 1940. At the outbreak of the Great Fatherland War, labor (in man-days) spent on treating one ton of scutching by-products in flax factories was 4.5 times less than on the kolkhozes; and labor spent on production of one ton of flax fiber (long and short) in flax factories was 5.7 times less than on the kolkhozes. Thus, initial processing of flax in factories brought a considerable saving of labor. In treating the 1939 crop, flax factories saved an estimated 39,100,000 man-days

CONFIDENTIAL

CONFIDENTIAL

for flax-cultivating kolkhozes by expending 12,100,000 man-days of manual and office work.

Perfection of swingline turbines enabled them to process also the lower grades of scutching by-products. Of the total amount of by-products processed in flax factories, turbines processed 93.1 percent in 1940, whereas in 1932 they processed only 60.3 percent. The yield of long fiber from by-products processed with turbines rose in that period from 5.9 to 9.3 percent, and the total yield of fiber - from 21.3 to 24.3 percent. The proportion of tow in the gross output of flax factories (fiber and tow) decreased from 16.1 percent in 1932 to 2.3 percent in 1940.

In spite of the progress mentioned, there were also important shortcomings in initial processing of flax in factories. One of them was incomplete utilization of equipment. In 1940, flax factories treated only 69.3 percent of the possible volume of by-products, according to established norms (for two-shift work). The number of working turbines reached, in 1940, 90 percent of those installed. Much could be done to raise the productivity of equipment in factories for initial processing of flax by lengthening their working periods.

Much attention has been paid to the problems of selection and seed cultivation of the fiber flax. Before the outbreak of the Great Fatherland War, Soviet agricultural selection men had bred and turned over for propagation and industrial utilization 24 different kinds of fiber flax. Seed cultivation of selected flax began in 1928. Rotation of varieties started in 1934, allowed sowing in 1938 of first grade seeds on 78 percent, and in 1940 -- on over 99 percent of all flax acreage in the USSR (parts of the remaining one percent were reserved for mountain flax.)

From year to year the use of mineral fertilizers in flax cultivation has rapidly increased. In 1935, flax-cultivating kolkhozes were supplied with 61,000 tons, and in 1937 with 462,000 of mineral fertilizers.

CONFIDENTIAL

CONFIDENTIAL

In spite of all these investments in the flax industry, the fiber flax yield was rising very slowly from the low level to which it had dropped at the beginning of the rehabilitation of our flax industry. On the average, it had amounted in 1925 - 1929 to 2.2 centners per hectare; in 1930-1934, to 2.3 centners per hectare; and in 1935 - 1939, to 2.6 centners per hectare. In 1940, the average USSR yield was 2.7 centners per hectare. Changes in fiber flax yield are shown in Figure 3.

Among leading flax-cultivating districts, the highest yields were obtained in Kalinin and Smolensk Oblasts, and the lowest in Kirov Oblast and Udmurt ASSR. Among districts with a low proportion of flax acreage, the highest average yields of fiber flax acreage were obtained in the Altay Krai and Novosibirsk Oblast, and the lowest in Mari ASSR.

The low yield of fiber flax can be accounted for by the still insufficient level of agricultural techniques, which can be illustrated in particular by the following TsSU figures: in 1940 of the USSR total flax acreage, 52.1 percent was sown after clover, 43.9 percent had been fertilized, 32.3 percent had been fertilized with mineral fertilizers, and 13.7 percent were additionally fertilized during the growth of flax. The use of organic fertilizers amounted only to about two thirds of the 1928 level. Only 16 percent of all flax-cultivating kolkhozes had established grass-land rotation.

Some negative influence on the flax yield was also exerted by maldistribution of flax acreage. Some rayons and kolkhozes were overloaded with flax which led to sowing of flax on top of bad previous crops. On the other hand, some rayons and kolkhozes sowed only small areas, and the flax did not receive the proper attention.

Among rayons obtaining high yields, should be mentioned the Bezhetskiy, Molodotudskiy, and Molokovskiy rayons, Kalinin Oblast; Baturinskiy Rayon, Smolensk Oblast; Breytonskiy Rayon, Yaroslavl Oblast; and a number of other rayons during which the Second Five-Year Plan and three years of the Third-Five-Year Plan achieved an average yield of flax fiber over 3.5 centners

CONFIDENTIAL

CONFIDENTIAL

per hectare. Before the war, leading kolthozes obtained a yield of flax fiber of 5-7 centners and more per hectare, and Stakhanovites of the flax industry obtained over 10-20 centners per hectare.

Simultaneously with rehabilitation and further development of flax cultivation, production of commercial flax products increased in the USSR. For the pre-war five year period (1935-1939) an average of 27.9 percent more flax fiber went to the government than in the preceding five-year period, and 90.7 percent more than of the 1925 - 1929 crops.

A somewhat higher commercial value of flax products per hectare was achieved in northwestern oblasts. Within Kalinin Oblast, the steadiest and highest flax products production was shown by Byezhetskly, Molokovskiy, Sandevostkiy, Krasnokholmskiy, Ovinishchenakiy, and Rzhevskiy rayons.

The above data shows that the main shortcoming of flax industry in the years preceding World War II was the low commercial value of flax products per hectare. One of the main causes of this situation was, (together with a low yield), big losses during harvesting and initial processing of flax (due especially to belated harvesting). Another important deficiency was a low yield of long fiber in flax factories. Long fiber constituted only 55-60 percent of commercial flax fiber products in the whole country.

Under Soviet administration, a radical change in distribution of commercial flax fiber products has taken place. Export has decreased while consumption of fiber by the flax, hemp-jute and other branches of domestic industry has increased. For example, export of flax fiber amounted to an average of 38,000 tons in 1936 - 1938, including 17,400 tons of combed flax and tow, thus showing a 52.6 percent decrease as against the preceding five-year period. In the same years, only 14 percent of commercial flax fiber products were exported.

CONFIDENTIAL

CONFIDENTIALFlax Production During the Years of the Great Fatherland War and Postwar Period

During the years of the Fatherland War USSR flax cultivation was greatly impaired, inasmuch as the greater part of the fiber flax crop was concentrated in the western rayons of the USSR.

Fiber flax cultivation suffered greatly from German occupation. In 1942 the zone of occupation included flax producing rayons which in 1940 sowed 1,200,000 hectares of fiber flax, or 57 percent of the entire flax area in the country. Further, these were rayons of high marketability of flax products.

As a result of devastation by the German occupational forces of the flax growing economy in the western rayons and difficulties during the war years, areas under fiber flax were reduced by more than 2 times.

In 1945 as compared with 1944, the following areas increased their flax plantings: Belorussian SSR - 4.2 times; Ukrainian SSR - 2 times; Smolensk Oblast - 1.8 times; Pskov Oblast - 1.6 times.

In 1946 Pskov, Novgorod, Velikiye Lukiv, Kalinin, Smolensk and eastern oblasts of Belorussian SSR and Ukrainian SSR continued to restore their flax cultivation and, compared with 1945, increased the area under flax by 38 percent. On the contrary, other oblasts and republics of the European part of USSR and Siberia, during these 2 years, reduced the area under flax by 30 percent. Particularly sharp reductions in the planting of flax were noted in Kostroma and Kirov Oblasts.

In spite of wartime difficulties, most oblasts during the war years increased flax yields as compared with pre-war levels.

A number of rayons (Krasnokholmsk, Bezhetsk, Kashinsk and Sonkov of the Kalinin Oblast, and Chkalovsk of the Gorkiy Oblast) achieved in 1944 an average fiber flax output of five centners per hectare and over.

CONFIDENTIAL

CONFIDENTIAL

The volume of production of flax goods was sharply reduced during the years of the Great Fatherland War. Out of the 1941-44 crops converted into fiber, production on a yearly average was 3 times smaller than in 1940. The drop in the production of flax goods during the war years was primarily at the expense of the western districts (northwestern oblasts of RSFSR, Baltic republics, Belorussian and Ukrainian SSRs, which were under total or partial occupation during the war. Out of the 1944 crop they produced 70.2 percent less flax products than out of the 1940 crop.

In the USSR during 1941-44 the marketability of flax products, from 1 hectare planted flax, was also below pre-war levels.

However, in 1944 it was up to the 1940 level, and in individual oblasts (Kalinin, Yaroslavl, Vologda, Arkhangel'sk) had even improved. In the Kalinin Oblast, the production of flax goods from the 1944 crop was, per hectare, 2.20 centners as against 1.95 centners from the 1940 crop. In Kalinin Oblast, Kamenok, Kashinsk, Bezhetz, Emelyanov, and Senkov Rayons delivered the largest amounts of flax goods per hectare (2.2 - 3 centners).

The composition of semi-finished flax production as well as the condition of preparatory processing of flax underwent considerable changes. The relative importance of factory processed raw materials decreased from 69.8 percent in 1940/41 to 56.4 percent in 1944/45 (Figure 4).

Figure 4. Relative Importance of Factory Processing in Commodity Production of Fiber.

Factory Processing

Non-Factory Processing

As a result of persistent efforts in restoring ruined enterprises begun during the war, all MTS were restored in the Kalinin Oblast by the end of 1945.

In the flax-producing oblasts considerable work was undertaken in restoring MTS and raising the level of mechanization during 1946. Mechanization of the most important operations in flax producing kolkhozes, is

CONFIDENTIAL

CONFIDENTIAL

indicated by the following data on seven large flax producing oblasts (within present boundaries); Kalinin, Vologda, Velikiye Luki, Yaroslavl, Kostroma, Pskov, Novgorod. In 1946 in these oblasts, the number of kollektives served by the MTS was 61.7 percent compared with 1938, and for all the planted areas--71.8 percent.

Tractor power in 1946 was 60.7 percent as compared with 1938. Animal tractive power within the MTS zone of operation was 41 percent compared with 1938. As a result the relative importance of tractor power in the above-mentioned oblasts in 1946 increased, on an average, up to 49.9 percent (in 1938 - 40.4 percent).

With a reduced zone of operations of MTS, and a considerable decrease in tractor power the supply of mechanical traction for 100 planted hectares in 1946 was 1.8 percent less than in 1938, and was equivalent to 6.4 HP per 100 planted hectares. Total supply of animal and mechanical traction in 1946 in the above-mentioned seven oblasts was only 68.3 percent as compared with 1938.

The drop in tractor power park effected the volume of work performed by MTS. In 1946, converted into conventional plowing units, the work performed in the oblasts mentioned was 56.6 percent compared with 1938.

It should be noted that indexes of tractor utilization in 1946 were no worse than in 1938. In 1938 for the same 7 oblasts, the output of each 15-power tractor was 226.4 hectares of conventional plowing, while in 1946 the figure was 227.7 hectares.

Data quoted indicate that in terms of supply of tractor energy and scope of work performed, in 1946 the basic flax producing oblasts had considerably lower indexes, as compared with pre-war years.

The lowest indexes belonged, of course, to oblasts under extended and complete occupation of the German fascists--Pskov and Velikiye Luki.

CONFIDENTIAL

CONFIDENTIAL

Important changes took place in 1946 in the work structure of MTS as compared with 1938. As an average, in Kalinin, Smolensk, Velikiye Luki, Gor'kiy, Novgorod, Pskov, Ivanovo, Vologda, Kostroma and Yaroslavl Oblasts and Belorussian SSR, work performed by MTS in percentage to the total amount of work done in 1946 is shown in table 2.

Table 2
STRUCTURE OF WORK PERFORMED BY MTS IN KOLKHOZES OF
THE ELEVEN MAIN FLAX PRODUCING OBLASTS IN 1946

<u>Type of Work</u>	<u>Percent of Total Work Performed</u>	<u>Type of Work</u>	<u>Percent of Total Work Performed</u>
Basic spring Cultivation of soil	50.9	Flax scutching Initial processing of flax	0.4 0.2
Preplanting cultivation	27.2	Grain threshing	4.8
Planting all crops	2.8	Grain threshing and drying clover seeds	1.2
Flax planting	--	Winter plowing	5.9
Grain harvesting	1.5	Utilization of new lands	5.6

For basic and preplanting soil cultivation in the oblasts mentioned, the indexes are rather close, with the exception of the Velikiye Luki Oblast, where basic soil cultivation was reduced to 28.4 percent and pre-planting cultivation increased to 40.4 percent.

Relative importance of scutching fiber and initial processing of flax in 1946 was 9.6 percent, as compared with 1938 when these operations as an average among the 11 mentioned oblasts represented more than two percent, while in the leading oblasts--up to 7.9 percent (Kalinin).

1946 saw a slight reduction in the relative importance of all work performed by MTS in threshing and drying clover seeds, compared with 1938. There was practically no threshing of flax by MTS.

CONFIDENTIAL

CONFIDENTIAL

Basic soil cultivation	Flax scutching	Threshing Grasses and drying clover seeds
Preplanting soil cultivation	Flax threshing	Grain threshing
Planting and cultivation of	Initial operations on flax pulling ma- chines	Cleaning and im- proving new lands
Harvesting grain crops		Winter plowing

Figure 5. Structure of Work Performed by MTS Kalinin Oblast in 1938 and 1946 (totals without other operations).

Although, compared with 1944 and 1945, in 1946 the relative importance of MTS in flax pulling and initial processing had somewhat increased, as a whole relative importance of these very important and responsible operations in flax cultivation in the overall volume of MTS operations, remains completely unsatisfactory.

During the Fatherland War the number of flax-scutching machines and the quantity of flax scutched had decreased considerably. Thus, as an average for nine flax cultivating oblasts (Kalinin, Novgorod, Pskov, Yaroslavl, Kostroma, Volgda, Kirov, Gor'kiy Oblasts, and Belorussian SSR), the number of flax-scutching machines was reduced nearly two times, while the quantity of processed flax - 8 times.

Considerably higher production per flax-scutching machine was achieved in the following republics and oblasts: Ivanov Oblast - 37.2 hectares, Yaroslavl Oblast - 19.8 hectares, Belorussian SSR - 15.6 hectares, Kalinin Oblast - 13.4 hectares. A particularly low average production per flax-scutching machine occurred in Pskov Oblast (3.2 hectares) and Novgorod (4.1 hectares).

As a result of the considerable drop in the number of flax-scutching machines and their poor utilization, the percentage of mechanization of flax-scutching in the oblasts mentioned fell sharply. For example, in a leading flax-cultivating oblast such as Kalinin, comparatively well equipped with flax-scutching machines (5.5 flax-scutching machines per 1,000 hectares of flax planting), only 11,378 hectares of flax were scutched by scutching machines in 1946. Relative importance of flax machine scutching represented only 7.4 percent, that is, nearly 4 times less than in

CONFIDENTIAL

CONFIDENTIAL

1938. In other flax-cultivating oblasts the role played by machine scutching was even lower: in Kostroma ^{44.4%} 5.6 percent; in Kirov Oblast 3.8 percent; and in Belorussian SSR, Novgorod and Smolensk Oblasts, machine scutching was not more than a fraction of a percent. The number of flax scutching machines in MTS and kolkhozes and processing of flax fibers during the war years also fell considerably. The degree of mechanization in non-factory processing of flax in the same nine basic flax-cultivating oblasts was as follows: in 1946 quantity of flax-scutching machines in the above-mentioned was 56.4 percent of the number available in 1938.

Only in two oblasts did the flax-scutching machine power increase: in Kostroma (101.4 percent) and in Gor'kiy (138.4 percent). The decline in the number of flax-pulling machines was particularly sharp in Belorussian SSR and Pskov Oblast.

As for the flax-scutching machine KLT-VNILL-A, horse-drawn and belonging to the kolkhozes, the majority were out of commission, and few even of those remaining were used during the initial flax processing season of 1946.

A reduction in the number of flax-scutching machines and their being processed on flax-scutching machines VNILL-S as compared with the 1938 yield. In other oblasts, the production per flax-scutching machine remained on a pre-war level and even rose (Gorko Oblast).

A decline is also noted in the relative importance of machine processing of flax in the total quantity of flax fibers processed by non-factory methods, compared with the pre-war years. Thus, in Kalinin Oblast (within existing boundaries), the percentage of mechanical scutching of flax fiber on VNILL-S machine only, was 12.4 percent in 1938, while in 1946 it was 5.9 percent.

Lower indexes in the utilization of flax-scutching and flax-drawing machines in 1946 as compared with pre-war years may be explained to a large extent by the fact that the majority of these machines were worn out and could not be repaired because of a lack of spare parts.

CONFIDENTIAL

CONFIDENTIAL

Of material importance in the decline of mechanization of scutching and initial processing of flax is the decrease of qualified flax-scutchers and machinists during the years of the Fatherland War.

Preparatory processing factories suffered enormous damage during the war years. Most of these factories in the occupied zone were destroyed.

In many western oblasts before the Fatherland War the flax mills were of paramount importance in processing the fiber flax crop. In the more important flax-growing oblasts under occupation, out of the entire 1940 crop, factory raw material represented: within the boundaries of present-day Pskov Oblast - 93 percent, Velikiye Luki - 83 percent, Smolensk - 84 percent, Vitebsk - 98 percent and Mogilev - 93 percent.

Despite wartime difficulties, most of the flax mills outside the zone of military operations operated satisfactorily. Fibre yield out of trests processed on swingle turbines went up from 9.3 percent in 1940 to 10.6 percent in 1945.

Total fibre yield increased from 24.3 percent in 1940 to 25.3 percent in 1945.

Production efficiency also went up. In 1945 as an average in all the factories, productivity of one swingle turbine per machine-shift was 350 kilograms long fibre (Figure 6).

High indexes in the utilization of equipment and raw material and operating efficiency of labor made it possible for Moshenskiy Factory (Novgorod Oblast) to process 331 tons of long fiber in 1944 (i.e., 2.2 times more than the average production of all factories in 1940); the Volkhomskiy Factory (Kostroma Oblast) processed as an average for one machine-shift 57.3 centners of trest (1.6 times more than the average factory production in 1940) and produced 7.3 centners of fibre-flax per machine-shift (2.1 times more than the average factory production in 1940).

However the overall production of flax fibre in factories (averages of 1941-45) compared with the average production of 1936-40, decreased

CONFIDENTIAL

CONFIDENTIAL

by 65.3 percent and the production of long fibre by 60.6 percent.

Average of all Flax Factories

Vokhonski Factory 1944

Quantity of trestli processed
per machine shift (Centners)

Production of Long Fibre per
machine-shift (kilograms)

Regarding flax production, at the end of the 5-year plan, a total yield of 800,000 tons of fiber flax is to be assured based on a yield of 4 centners and a higher average number of fibre flax. This means that by 1950 the total pre-war area under flax cultivation in the USSR is to be restored and total fibre flax yield is to exceed that of 1940 by 39 percent.

In developing the Law of the 5-Year Plan 1946-1950, the party and government in 1946-47 adopted several important resolutions, among them: Decree of the Council of Ministers USSR dated 13 May 1946 "Measures to Restore and Further Develop Flax and Hemp Cultivation;" Decree of Council of Ministers of USSR and TsKVKP 19 September 1946, "Measures to Eliminate Infractions of the Statutes of Agricultural Workers Association in the Kolkhozes," and the decree of the February Plenum Central Committee VKP (b) "Measures to Improve Agriculture in the Post-war Period."

The government-established rate for the sale of flax production to the government is a great incentive for flax-cultivating kolkhozes of the country, as well as for the peasant enterprises of the Western oblasts and republics, in the production of flax.

For delivering and selling flax to the government, kolkhozes, kolkhoz-members and individual peasants receive not only money, but also grain, consumer goods, vegetable oil or sugar. All this serves as an incentive for a speedy restoration and further development of flax cultivation.

However, many MTS in flax cultivating oblasts are as yet not meeting quotas for such important operations as flax scutching, primary processing of flax, grain harvesting. The relative importance of these operations

CONFIDENTIAL

CONFIDENTIAL

in the overall scope of work performed by the machine tractor stations of flax-cultivating rayons is still very low and the degree of mechanization of these operations in the kolkhozes is far from sufficient. At the same time, flax scutching where there is a shortage of labor and poor mechanization this leads to a heavy drain on labor during harvest time. As a result, harvesting and subsequent operations in the primary processing of flax are not performed within the best agricultural time limits. In the final analysis we have heavy losses in production, thereby reducing the marketability of flax.

Squad organization in flax-growing kolkhozes was first introduced in 1935. Flax-growing squads during the first years were assigned, as a rule, to small flax areas--one or two hectares. On the whole in 1937, they were assigned 14 percent of the entire flax seeded area and in 1938 - 19 percent. In 1939, 53.5 percent of the entire area under flax in the USSR were assigned to squads. In leading flax-growing oblasts, the percentage of flax-cultivating areas assigned to squads was much higher: in Kalinin Oblast, 72 and in Smolensk, 85.

A study of the performance of squads and experience with squad organization of labor in leading kolkhozes show that in flax growing kolkhozes, it is recommended that squads are assigned 3-4 crops. In flax-growing kolkhozes, in other than black-soil zones, squads should be assigned flax, seed-clover, potatoes and grain seed plots.

Maximum number of men per squad is 7 to 10. Experience has indicated that a squad of this size is in a position to perform the entire range of field operations for the assigned crops, and also independently (or with temporary help of other squads) to serve the most common mechanized processes in flax-growing kolkhozes--threshing on an "Eddy" flax-threshing machine, and scutching on a scutching machine of the VNIIL-S type, etc.

CONFIDENTIAL